Compression Test Kit

Instructions for Compression Test Procedure

1. Run the engine for about ten minutes or until it reaches normal operating temperature before performing the compression test.

2. Stop the engine. Disconnect all the spark plug wires and number them in the order in which they were removed; this makes them easy to identify for reconnection.

3. Loosen all spark plugs about one turn, but do not remove them. Use an air hose or stiff brush to remove all the dirt from the spark plug wells. Remove the spark plugs and place them on a clean, flat surface in the order in which they were removed. This procedure will help to correlate any compression or cylinder problems with the condition of the plug from the particular cylinder involved.

4. Remove the air filter and set the carburetor throttle plates to the wide open throttle position using a wooden block, being careful not to damage the linkage or carburetor components. See Figure 1.

5. Remove the high tension lead from the center of the distributor and connect to ground as shown in Figure 2. To disable electronic ignition systems, disconnect the electronic ignition module or remove the primary battery terminal from the ignition coil. On GM HEI V-8 and V-6, disconnect the primary lead from the distributor cap (Figure 3).

6. Disconnect the hose from the gauge. Screw the spark plug adapter hose (Item 3, Figure 6) into a spark plug well. Hand tighten only – DO NOT USE A WRENCH. See Figure 4.

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NOTE: On engines with long reach plugs, use the long reach adapter (Items 5 and 6, Fig. 6). Do not use the adapter in short reach holes – it may hit the top of the piston and damage the engine.

7. Insert the spark plug hose into the gauge by pulling up on the outer sleeve of the gauge's quick disconnect coupling and allow it to snap back as the fitting engages the adapter.

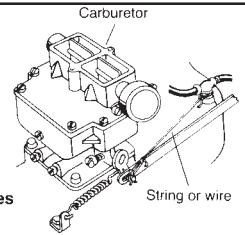

Figure 1
Held Open
Throttle Plates

CAUTION!
Failure to return the carburetor throttle plates to the closed position before starting the engine can cause serious engine damage.

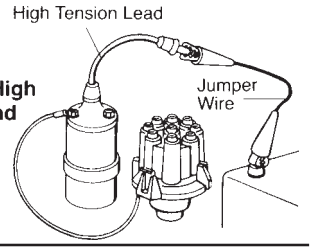

Figure 2
Grounded High
Tension Lead

8. Crank the engine for at least four compression strokes or until the pressure reading stops rising on the gauge.

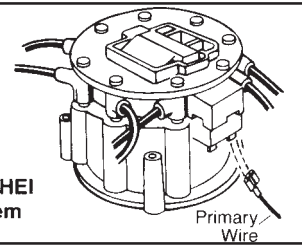

Figure 3
Disabled GM HEI
Ignition System

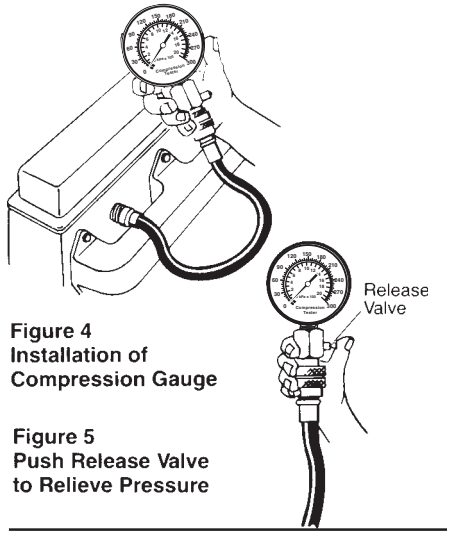

Figure 4
Installation of
Compression Gauge

Figure 5
Push Release Valve
to Relieve Pressure

9. Record the compression reading, then push the side release valve to relieve the pressure as shown in Figure 5. Repeat the test. Record the reading, relieve the pressure, remove the gauge from the hose, and remove the hose from the spark plug well.

10. Reconnect the hose to the next spark plug well to be tested and repeat steps 6 through 10 for the remainder of the cylinders to be tested.

Professional Series

KAL EQUIP

Test Results

1. On a normal cylinder, the gauge needle should travel up-scale on each compression stroke until it reaches a peak value. All cylinders should indicate a pressure that is within the vehicle manufacturer's specifications, and the reading should not vary more than 10% from cylinder to cylinder.

2. If the needle fails to travel up-scale as described in Step 1, or if it remains at the same value for several strokes and then starts to climb, the cylinder has a sticking valve.

3. If the compression reading is considerably higher than the vehicle manufacturer's specification, it indicates carbon build-up in the cylinder.

4. If a reading on two adjacent cylinders is 20 psi (or more) lower than the other cylinders, a defective head gasket is indicated. Water (coolant) and oil may be found in the two cylinders under these conditions.

5. If the readings are low or vary widely between cylinders, pour a teaspoon of S.A.E. grade 30 oil into each cylinder and retest. If the readings increase considerably, the fault may be due to poorly seated or worn piston rings. If the readings remain about the same, the valves and/or associated components are the likely cause.

6. Clean, regap, and reinstall the spark plugs in the same order in which they were removed, or install new spark plugs. Reconnect all spark plug wires in the proper order. Remove the wooden block from the carburetor throttle plates and make certain they return to closed throttle position. Reconnect the ignition system wiring, which was disconnected in Step 5, TEST PROCEDURE.

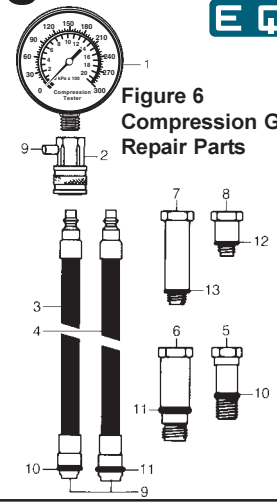

Figure 6
Compression Gauge
Repair Parts

Key	Part Number	Description
1	0031-0255	Compression Gauge
2	0180-0772	Quick Disconnect Coupling and Valve Assembly
3	0032-0112	14MM (Std) Spark Plug Hose Assembly
4	0032-0113	18MM (Std) Spark Plug Hose Assembly
5	0180-0895	14MM Long Reach Adapter
6	0180-0896	18MM Long Reach Adapter
7	0180-0894	12MM Adapter
8	0180-0893	10MM Adapter
9	*	Air valve (High Pressure)
10	*	O-Ring 14MM
11	*	O-Ring 18MM
12	*	O-Ring 10MM
13	*	O-Ring 12MM
14	0001-002-1644	Instruction Label (not shown)
15	0400-1346	Carry Case (not shown) includes item 14
16	*1000-2045	Repair Kit: includes five Air Valves item 9, eight O-Rings (two each) items 10, 11, 12, 13 Air Valve Tool (not shown)